Wireless MIMO Multi-Function Access Point

A02-AP2-W54M

MANUAL

A02-AP2-W54M_ME01

Where solutions begin

INDEX

A02-AP2-W54M_ME01 (V1.0 July 2006)

Copyright Statement

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, whether electronic, mechanical, photocopying, recording or otherwise without the prior writing of the publisher. Windows™ 98SE/2000/ME/XP are trademarks of Microsoft® Corp. Pentium is trademark of Intel. All copyright reserved.

The Atlantis Land logo is a registered trademark of Atlantis Land SpA. All other names mentioned mat be trademarks or registered trademarks of their respective owners. Subject to change without notice. No liability for technical errors and/or omissions.

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

·On board of airplanes, or

·In an explosive environment, or

·In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: except the channel 10 through 13, law prohibits the use of other channels.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the
- receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
This device must accept any interference received, including interference that may cause undesired operation.

CHAPTER 1: Introduction

This manual is think for an advanced utilization of Wireless MIMO Multi-Function Access Point; for this reason, you can find explanation of any functions supported by product. For fast configuration, please referee to Quick Start Guide.

1.1 An Overview of Wireless MIMO Multi-Function Access Point

Wireless MIMO Multi-Function Access Point allows a complete mobility maintaining a continuous connection.

Easy to install, fast and flexible, it allows to decide in what environment to work with your notebook or PC, through a wireless access. Now it's possible to extend your LAN without add cables.

The roaming functions allows a greater liberty of movement: the management of two or more Wireless MIMO Multi-Function Access Point also allows realizing a WLAN in offices of notable dimensions.

MIMO XR™ Technology and 3 2 dBi antennas allows to have a superior coverage in comparison to the normal IEEE802.11g WLAN with a more uniform throughput (not coverage zone will be reduced).

Packet-Overdrive ™ Technology allows having very fast performance, making the product an ideal solution for any binding application like streaming video HD.

Bridging function allows connecting 2 LAN through a wireless bridge, while Repeating function allows extending WLAN coverage; AP Client function also allows to configure the device like a wireless Ethernet Adapter.

Chipset solution guarantees a full hardware support, without performance degradation, of most recent security standard, like Wi-Fi Protected Access (WPA/WPA2) and IEEE802.11i.

Your wireless network will be now fast and sure.

1.2 Package Contents

Unpack the package and check all the items carefully. If any item contained is damaged or missing, please contact your local dealer as soon as possible. Also, keep the box and packing materials in case you need to ship the unit in the future. The package should contain the following items:

- Wireless MIMO Multi-Function Access Point
- CDRom container Multilanguage Manual (Italian, English and French) and Quick Start Guide

- Quick Start Guide
- Power Supply AC-DC (5V DC@1A)
- 2 dBi antenna R-SMA (3 pcs)
- Warranty Card

1.3 Technical Features

Wireless Multi-Function Access Point provides the following features:

- **IEEE 802.11g** and **IEEE 802.11b**: With built-in 802.11g access point for extending the communication media to WLAN while providing the WEP and WPA for securing your wireless networks.
- **MIMO XR™ Technology:** allows having a superior coverage in comparison to the normal IEEE802.11g WLAN with a more uniform throughput (not coverage zone will be reduced).
- **Packet-Overdrive ™ Technology:** allows having very fast performance, making the product an ideal solution for any binding application like streaming video HD.
- **Wi-Fi Protected Access (WPA/WPA2) e WEP encryption Support**: It's possible to use the highest security level without performance degradation. WPA2 use AES for a best protection.
- **WDS**: A pair of Wireless Multi-Function APs operating under Bridge mode to act as the bridge that connect two Ethernet networks or Ethernet enabled clients together. Repeat Mode is able to extend the effective range and coverage of the wireless network.
- **WDS+AP:** An owner solution allows device to work simultaneously in WDS and AP mode. It is possible to use WPA encryption to overcome WDS infrastructure limits.
- **Repeater:** Allows to extend the existent IEEE802.11g device WLAN coverage also with WPA2 encryption.
- **3 Antenne R-SMA:** External deteachable antennas for a best receiving performance (with diversity) and a larger coverage.
- **1 ports Fast Ethernet:** A fast Ethernet 10/100Mbps port is supported in the LAN site and automatic switching between MDI and MDI-X for 10Base-T and 100Base-TX ports is supported. An Ethernet straight or cross-over cable can be used directly, this fast Ethernet switch will detect it automatically.
- **Mac Filtering:** Mac Filtering function allows clients whose MAC addresses in the list will be able to connect to this Access Point.
- **Configurabile (GUI) via Web:** supports web based GUI for configuration and management. It is user-friendly with an on-line help, providing

necessary information and assist user timing. It also supports remote management capability for remote users to configure and manage this product.

- **Firmware Upgrade:** It's possible to upgrade firmware through Web interface.

1.4 System Requirements

Before installing the device, your PC should meet the following:

- Intel® Pentium®III 600Mhz or compatible processor with TCP/IP stack
- Internet Explorer V6.0 on Netscape V6.0
- CDRom

1.5 Hardware Installation of Wireless MIMO Multi-Function Access Point

Follow these istructions to make a correct cabling of Wireless MIMO Multi-Function Access Point:

- Wireless Multi-Function MIMO Access Point can be connect through LAN port (RJ45) at LAN network.
- Connect power supply **AC-DC (1A / 5V)** to device (**DC IN**) placed in the rear panel.

In this picture it's possible to see an example of WLAN cabling with Wireless MIMO Multi-Function Access Point in **AP mode**.

1.6 Considerations about installation

In best conditions, Wireless MIMO Multi-Function Access Point can provide a large coverage (about one hundred of meters).

It's necessary to consider some ambiental factors which can attenuate radio signals; walls attenuate radio signals and metallic objects reflects them. They can generate dangerous multiple path (MIMO Technology use multiple path to have a better throughput than IEEE802.11g).

It's also important to considerate radio interference by others radio devices operating in these frequencies.

Please follow these instructions to increase Wireless MIMO Multi-Function Access Point coverage area:

- Every wall attenuate radio signal; put the device in an appropriate place to minimize the number of wall to cross.

- Door or large metallic surfaces are not crossed by electromagnetic propagation.

- Get further Wireless MIMO Multi-Function Access Point from any device that generates RF emissions.

- During wireless client positioning, you have to minimize the number of wall which radio signal has to cross. See follow picture:
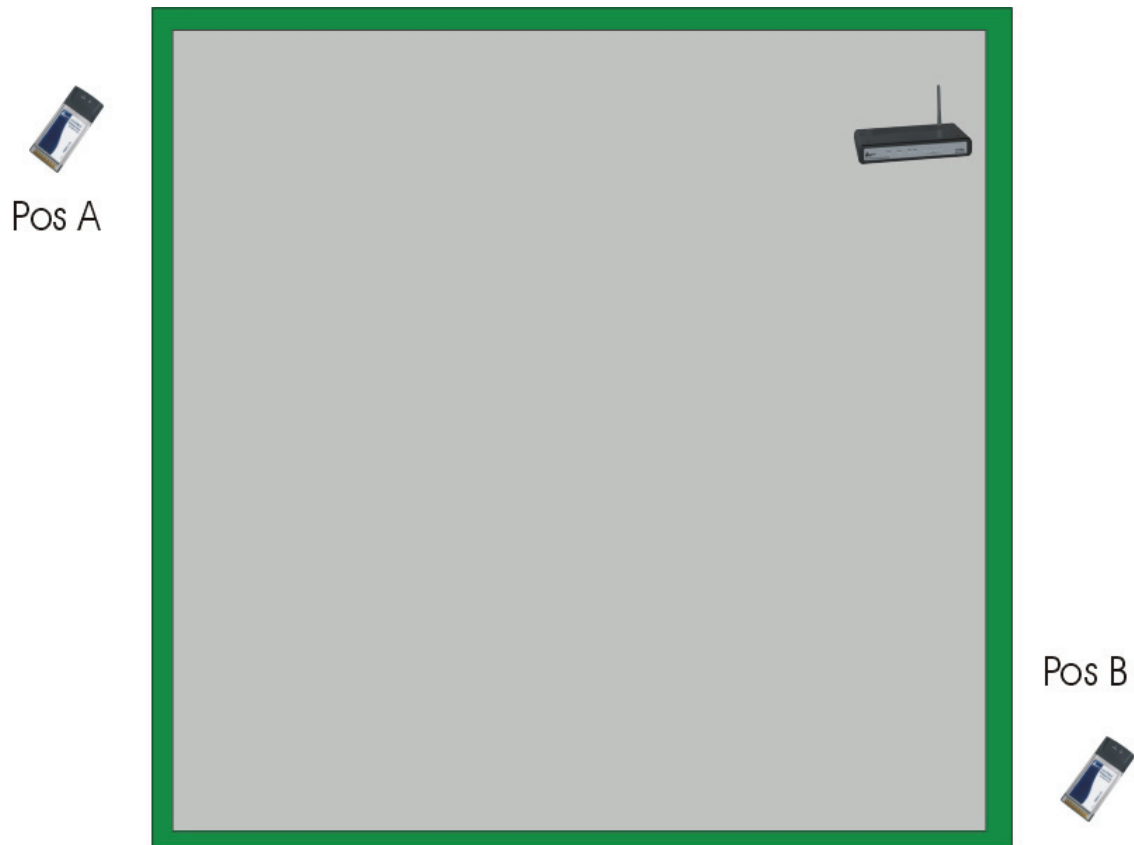
Client placed in pos B will have a large attenuation and worst performance than client placed in pos A.
You have to place Wireless MIMO Multi-Function Access Point in the middle of room to increase performance.

CHAPTER 2: Using Wireless MIMO Multi-Function Access Point

2.1 Cautions for Wireless MIMO Multi-Function Access Point

- Do not place the Wireless MIMO Multi-Function Access Point under high humidity and high temperature. It can damage the Access Point.
- Do not use the same power source for Wireless MIMO Access Point with other equipment.
- Do not open or repair the case yourself.
- If the Wireless MIMO Access Point is too hot, turn off the power immediately and have a qualified serviceman repair it.
- Place the Wireless Access Point on a stable surface.
- Only use the power adapter that comes with the package.
- Do NOT upgrade firmware on any Atlantis Land product over a wireless connection. Failure of the device may result. Use only hard-wired network connections.

2.2 The Front LEDs

The table below shows the LED Indicator of the Wireless MIMO Multi-Function Access Point.

LED	Meaning
POWER	Lights green when it is turn ON.
STATUS	Blinking green when device correctly work. Turn off or blinking (2 times at second or more) if it has some problems.
WLAN	Blinking green while trasmitting data on WLAN interface.

LAN	The indicator lights green when the LAN port is connected to an Ethernet network successful. Otherwise, the indicator blinking green while transmitting or receiving data on the Ethernet network.

2.3 The Rear Ports

Porte	Meaning
POWER (DC-IN)	Connect the Power Adapter DC plug to the AP's power jack.
LAN	Ethernet port with 10/100Mbps Fast Ethernet connections, connect this port to switch/hub.
Reset	If AP is power on: • Press reset button for 2/3 seconds; device will reboot (release reset button when LED STATUS turn off). • Press reset button until the device will reboot (LED STATUS turn off), only when LED STATUS will start to blink, release reset button. Now, the

	AP will reboot with factory default settings.
Reverse SMA Connectors	Screw antennas without force them.

2.4 Cabling

Connect to the Switch/Hub
- Plug in one end of the RJ45 network cable to the Switch/Hub port
- Plug in the other end of the RJ45 network cable to the Wireless Access Point

Check the installation
The LEDs of the Access Point are clearly visible and the status of the network link can be seen instantly:

- With the power source on, once the device is connected, the Power, LAN and WLAN port LEDs will light up indicating a normal status.
- If the LAN Port's Link indicator does not light up then check the RJ-45 cable if it is firmly feed to the RJ45 port, while the LAN is link up to the Switch/Hub, the LAN port's LED will light up.

CHAPTER 3: Configuration

The Wireless MIMO Multi-Function Access Point has a Web GUI interface for the configuration. The AP can be configured through the Web Browser. A network manager can manage, control and monitor the AP from the local LAN. This section indicates how to configure the AP to enable its functions.
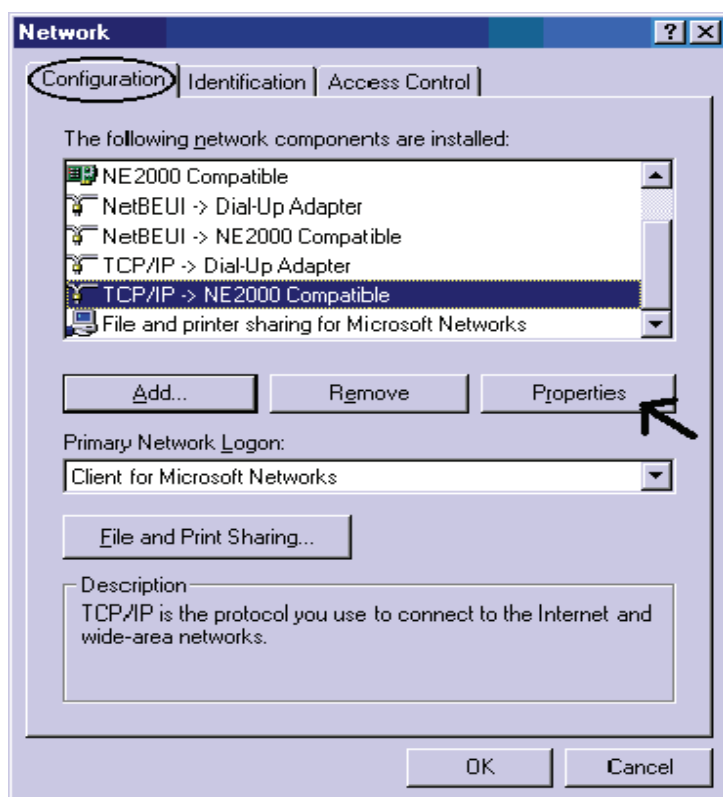
3.1 Before Configuration

This section describes the configuration required by LAN-attached PCs that communicate with the Wireless MIMO Multi-Function Access Point, either to configure the device or for network access. These PCs must have an Ethernet interface (or wireless adapter) installed properly, be connected to the Wireless MIMO Multi-Function Access Point either directly or through an external repeater hub or by wireless, and have TCP/IP installed and configured with a fixed IP address that must be in the same subnet of the Wireless MIMO Multi-Function Access Point. The default IP address of the Wireless MIMO Multi-Function Access Point is 192.168.1.254 and subnet mask is 255.255.255.0.

Please follow the steps below for PC's network environment installation. First of all, please check your PC's network components. The TCP/IP protocol stack and Ethernet network adapter must be installed. If not, please refer to MS Windows related manuals.

NOTE: Any TCP/IP capable workstation can be used to communicate with or through the Wireless Access Point to configure other types of workstations, please consult the manufacturer's documentation.
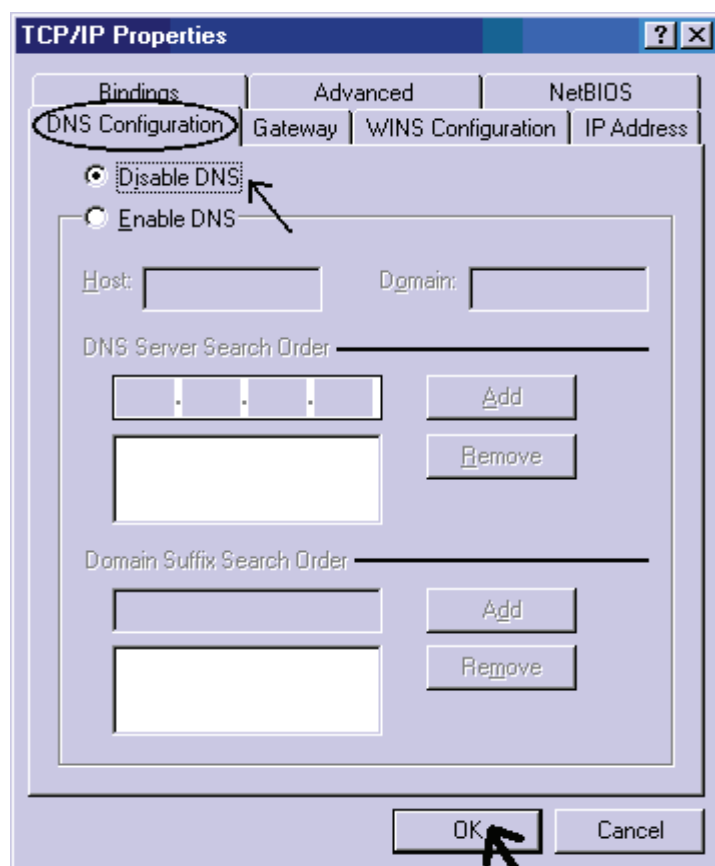
3.1.1 Windows 95/98/ME

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network** and choose the **Configuration** tab.

2. Select **TCP / IP -> NE2000 Compatible**, or the name of any Network Interface Card (NIC) in your PC.

3. Click **Properties**.
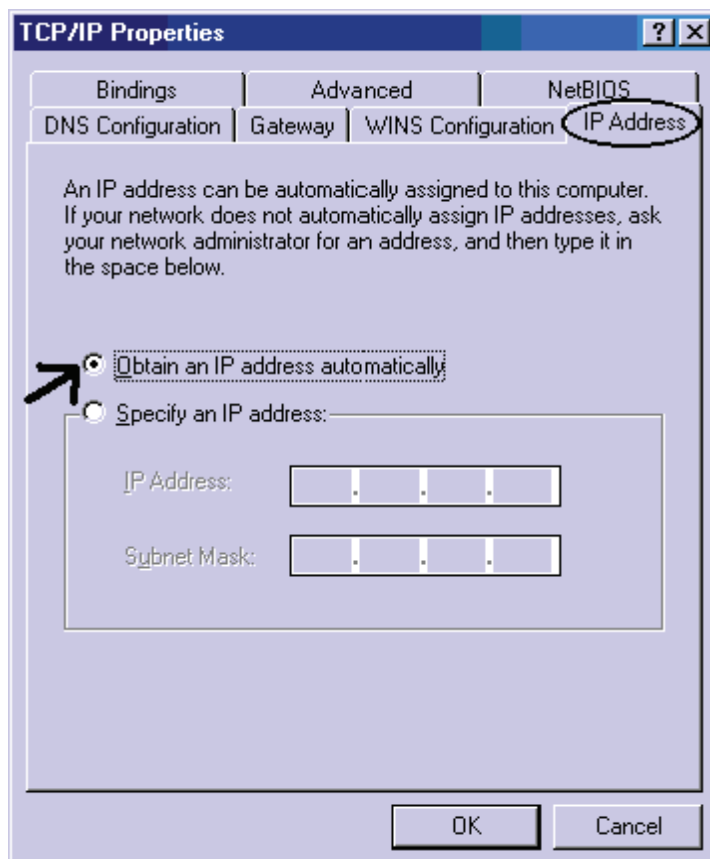
4. Select the **IP Address** tab. In this page, click the **Specify an IP address** radio button (EG IP=192.168.1.2 and subnet Mask=255.255.255.0).
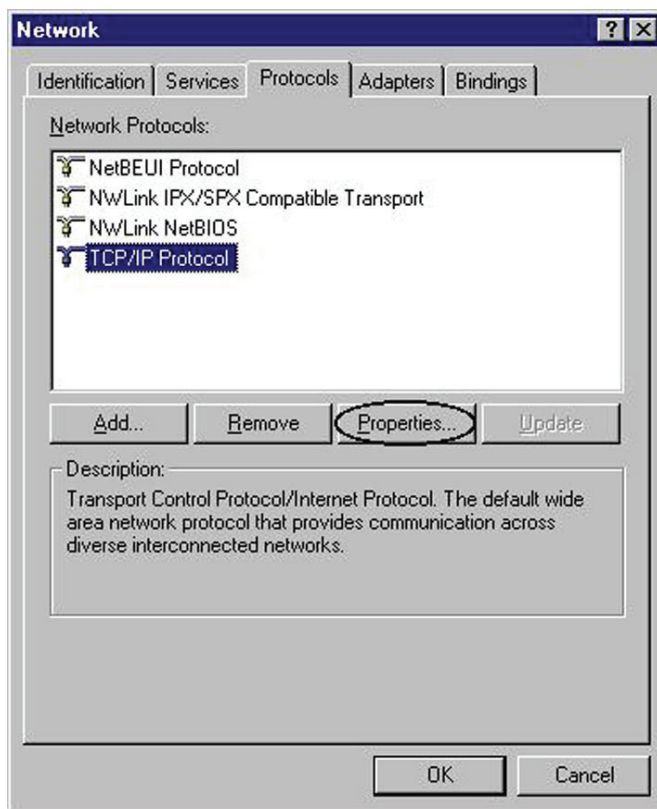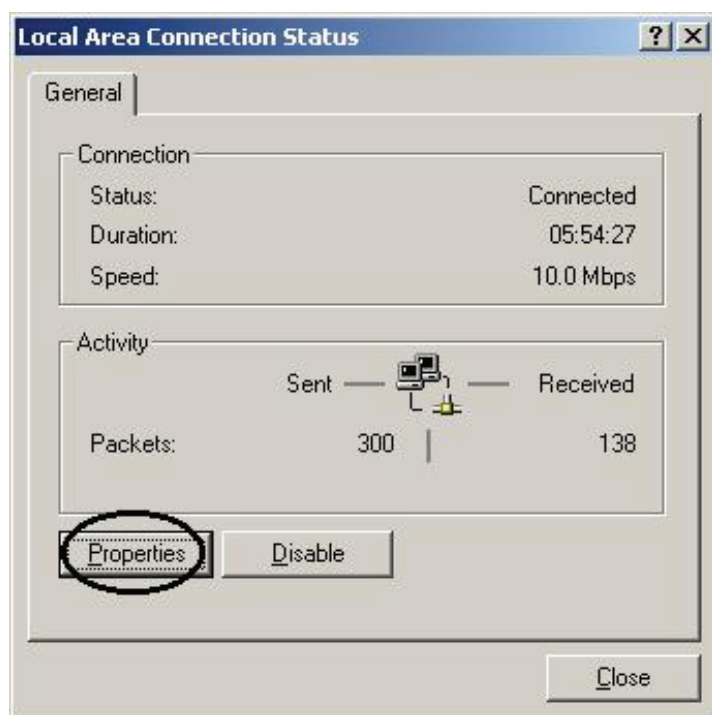
TCP/IP Properties

Bindings | Advanced | NetBIOS
DNS Configuration | Gateway | WINS Configuration | IP Address

- ⦿ Disable DNS
- ○ Enable DNS

Host: [   ]   Domain: [   ]

DNS Server Search Order

[.   .   .   ]   Add

[   ]   Remove

Domain Suffix Search Order

[   ]   Add

[   ]   Remove

OK   Cancel

5. Go to **DNS Configuration**

6. Select **Enable DNS** and insert DNS server addresses.

3.1.2 Windows NT4.0

1. Go to Start / Settings / Control Panel. In the Control Panel, double-click on Network and choose the Protocols tab.

2. Select **TCP/IP Protocol** and click **Properties**.
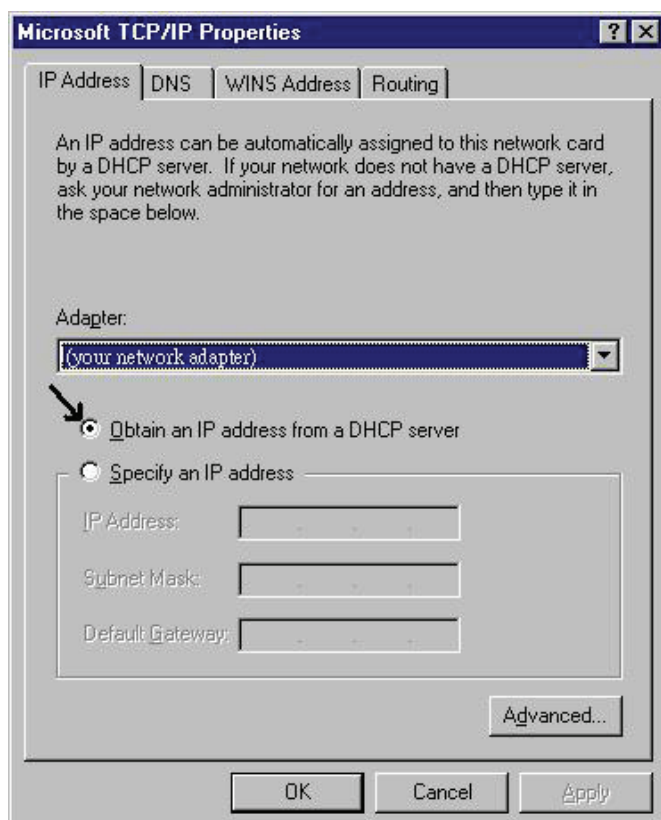
3. Select the **IP Address** tab. In this page, click the **Specify an IP address** radio button (EG IP=192.168.1.2 and subnet Mask=255.255.255.0).
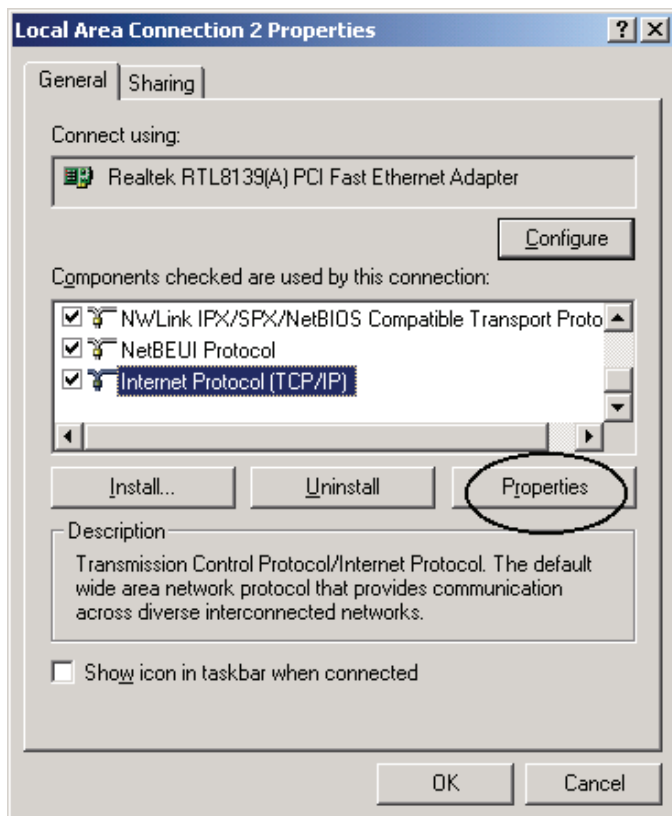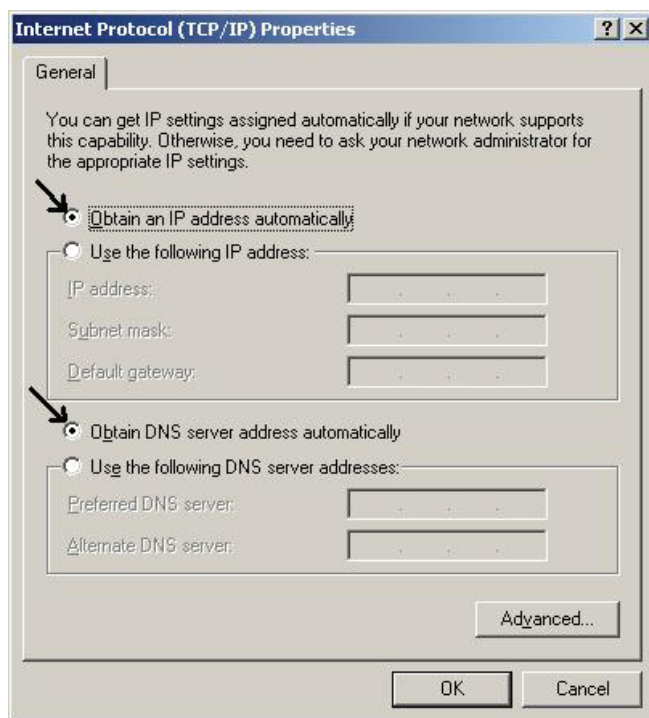
3.1.3 Windows 2000

1. Go to Start / Settings / Control Panel. In the Control Panel, double-click on Network and Dial-up Connections.

2. Double-click **LAN Area Connection**.

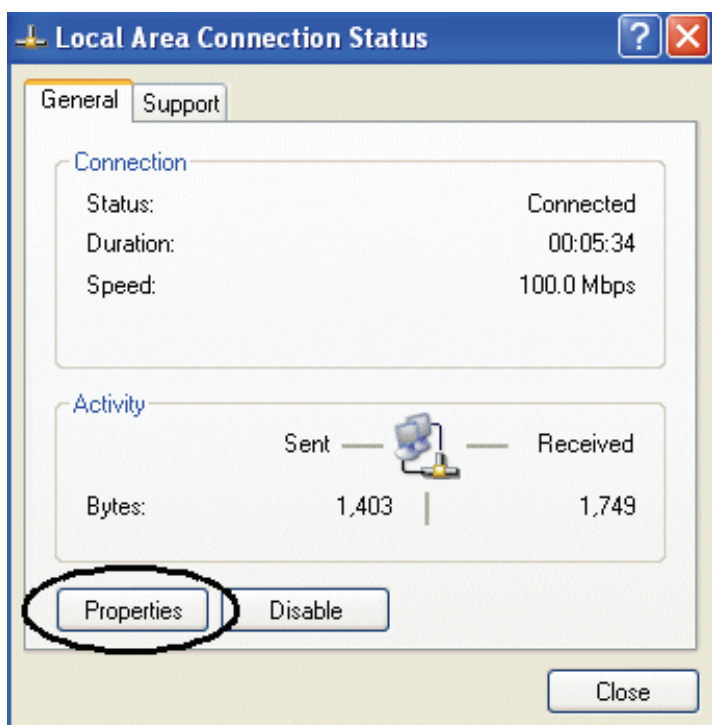3. In the **LAN Area Connection Status** window, click **Properties**.

4. Select **Internet Protocol (TCP/IP)** and click **Properties**.

5. Select **Use the Following IP Address** (EG IP=192.168.1.2 and subnet Mask=255.255.255.0).

6. Select **Use the Following DNS server address** and insert DNS Server addresses.
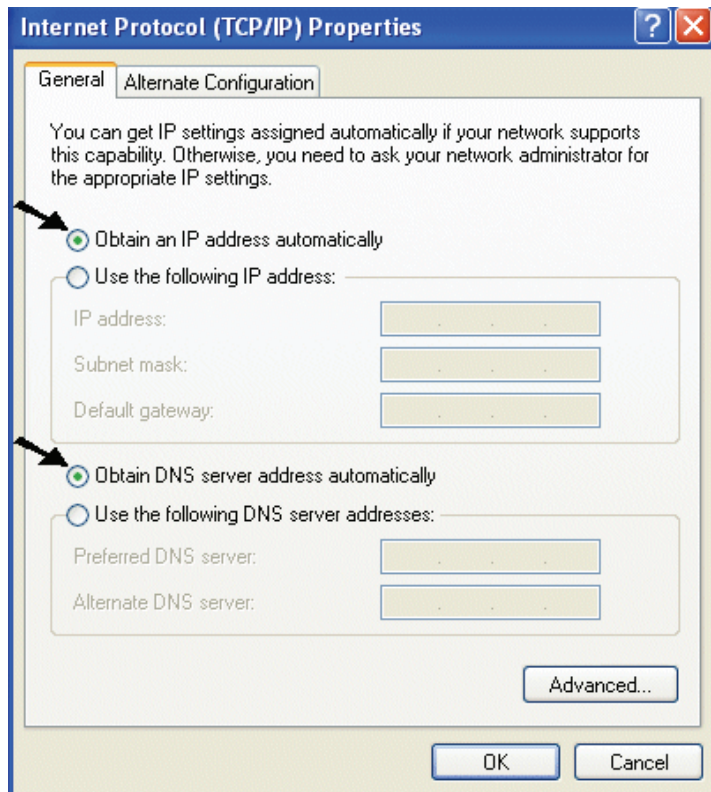
7. Click **"OK"** to finish the configuration.

3.1.4 Windows XP
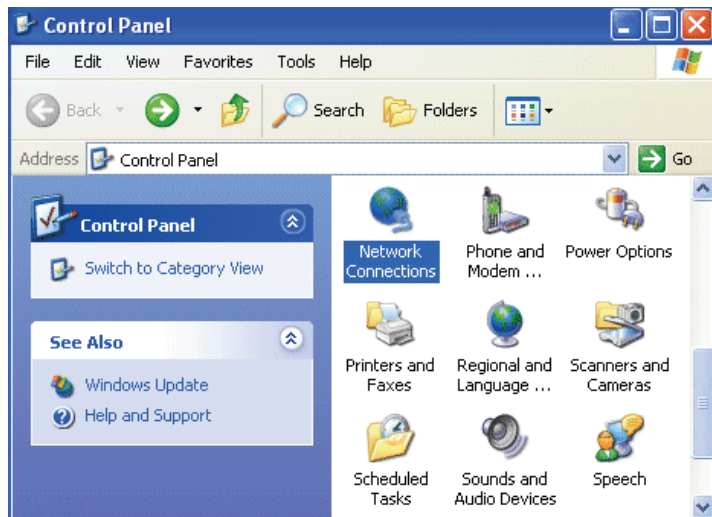
1. Go to **Start / Control Panel** (in Classic View). In the Control Panel, double-click on **Network Connections.**

2. Double-click **Local Area Connection**.

3. In the LAN Area Connection Status window, click **Properties**.

4. Select **Internet Protocol (TCP/IP)** and click **Properties**.

5. Select the **Use the following IP address** radio buttons (EG IP=192.168.1.2 and subnet Mask=255.255.255.0).

6. Select **Use the following DNS server addresses** and insert DNS Server Addresses.

7. Click **"OK"** to finish the configuration.

3.2 Default Setting

Before configuring the Wireless MIMO Multi-Function AP through WLAN, make sure that the SSID, Channel and the WEP was set properly.

- Username: **admin**
- Password: **atlantis**
- IP Address(**192.168.1.254**)
- Subnet Mask(**255.255.255.0**)
- Mode: **Access Point**
- SSID: **A02-AP2-W54M**
- Channel: **6**

3.2.1 Password

When there is a screen needs to enter the Network password, it means that there is a password settle, type in the password you entered before.

If you lose password, press reset button for 15 (or more) seconds to restore default setting to Wireless MIMO Multi-Function AP.
Press reset button until Wireless MIMO Multi-Function AP will reboot (LED STATUS turn off); when STATUS blinking, release reset button. Now, Wireless MIMO Multi-Function AP is restoring to factory setting.

3.2.2 LAN and WLAN Ports

The parameters of LAN and WLAN ports are pre-set in the factory. The default values are shown below.

Porta LAN		Porta WLAN
IP address	192.168.1.254	Mode=**Access Point**
Subnet Mask	255.255.255.0	Channel=**6**
		SSID= **A02-AP2-W54M**
		Security=**Disabled**

3.3 Accessing the Access Point Web Configurator

Before you configure this device, note that when the Accessing the Access Point Web Configurator is configured through an Ethernet connection, make sure the manager PC must be set on same the **IP network**. For example, when the default network address of the default IP address of the Accessing the Access Point Web Configurator is **192.168.1.254**, then the manager PC should be set at 192.168.1.x (where x is a number between 1 and 253), and the default subnet mask is 255.255.255.0.
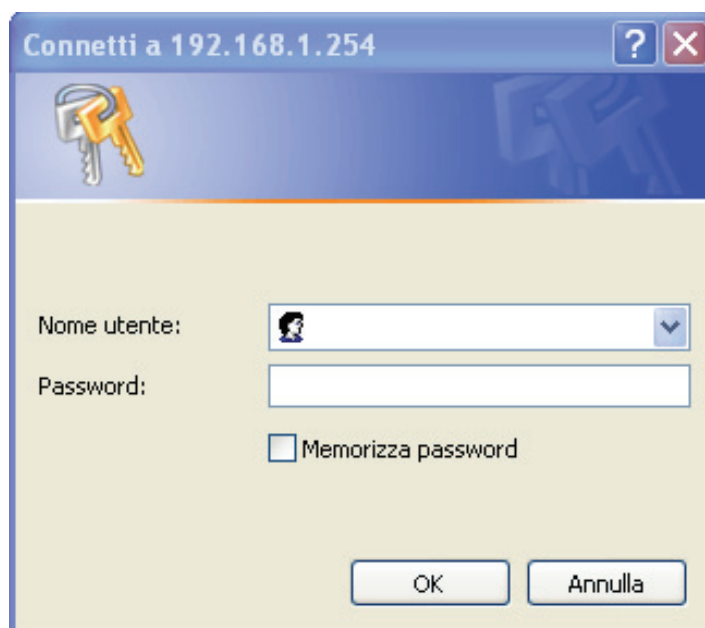
Open Internet Explorer 5.0 or above Web browser.

Enter IP address **http://192.168.1.254** (the factory-default IP address setting) to the address location.
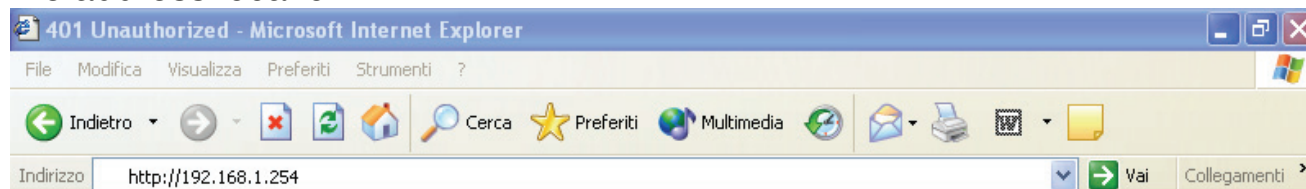
When there is a screen needs to enter the User name and Password, both of the default Username is "**admin**" and Password is "**atlantis**".

Click **OK**.

The screen will show the station summary of the AP when you login to the Wireless MIMO Multi-Function AP.

3.3.1 Navigating the Access Point Web Configurator

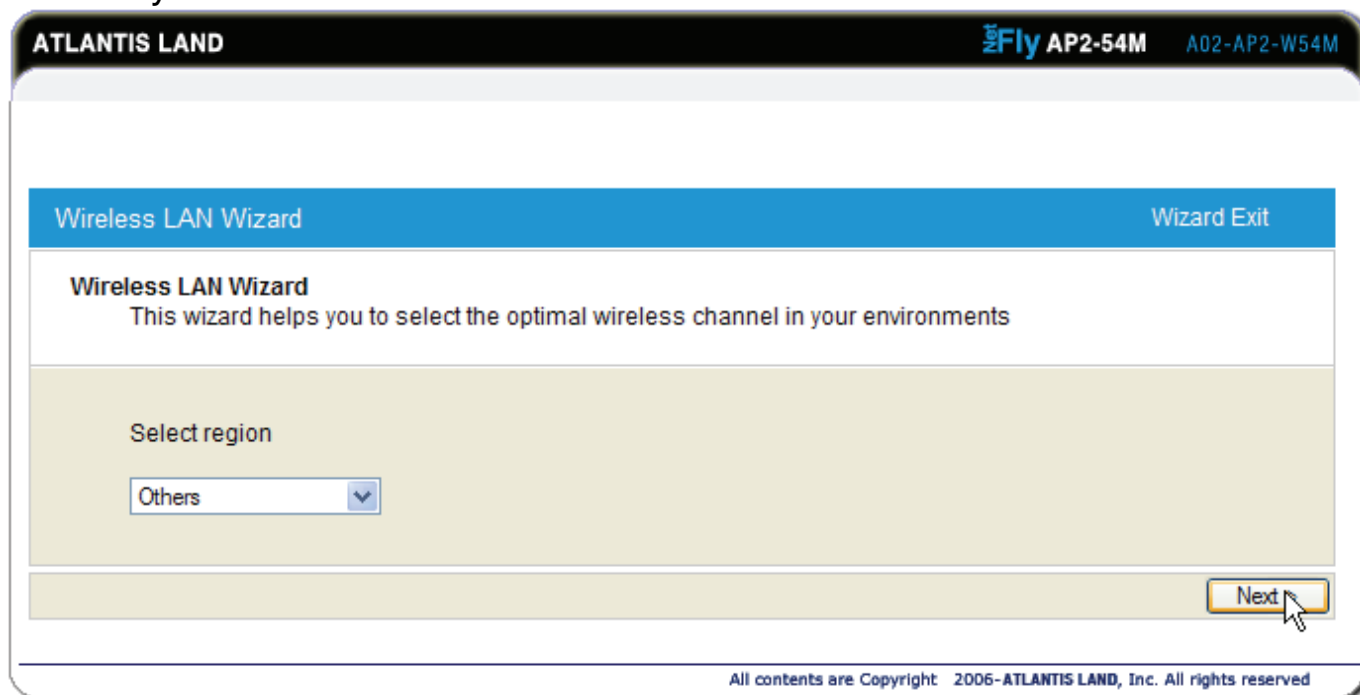This section describes how to browse on Web configuration interface.

2 Differents menu are available:
- Click on "**Wireless Wizard**" to set easily and fastly the Wireless MIMO Multi-Function AP through wizard configuration.
- Click on "**Login**" to enter to Web interface configuration of Wireless MIMO Multi-Function AP:
  1. Click on "**Status**" to see all details about AP, LAN and WLAN interfaces and event recorder.
  2. Click on "**Basic Setup**" to set the Wireless MIMO Multi-Function AP (LAN, Wireless, DHCP server).
  3. Click on "**System**" to access to the advanced functions of Wireless MIMO Multi-Function AP (Changing Password, Upgrade Firmware, System Log, Backup/Restore configuration).

3.4 Wireless Wizard

With this wizard setup, is possible set Wireless MIMO Multi-Function AP easily and fastly.

Choose your region or country (on field **Select Region**, set **Others**), and click **Next** to continue.

Wireless MIMO Multi-Function AP will make an automatic frequency scanning (it should during few minutes) to select best channel for trasmissions.

ATLANTIS LAND   NetFly AP2-54M   A02-AP2-W54M

Wireless LAN Wizard   Wizard Exit

Select An Optimal Channel

Channel	Usage	Overlapping
1	Used by other AP	SSID : A02-RAV260-W54
2	Available	75
3	Available	75
4	Available	75
5	Available	75
6	Used by other AP	SSID : A02-WR-54G
7	Available	100
8	Available	125
9	Available	150
10	Used by other AP	SSID : A02-RA141-W54
11	Used by other AP	SSID : I-Fly
12	Available	125
13	Available	75

Recommend **Channel 2**

Select Channel   2 ▾

< Prev   Next >

After channel analisys, the product will suggest the best channel for wireless trasmissions (in this table Wireless MIMO Multi-Function AP show all channel usage).
Click on **Next** to continue.

Insert Network Name (SSID) e click on **Next** to continue.

In this screen will be show all details about configuration settings. Click on **Apply and Finish** to reboot system.

Wireless MIMO Multi-Function AP will reboot and it will restart with new configurations.

3.5 Status

In this section, it show (parameters are not changeable) all details about LAN e WLAN interfaces.

ATLANTIS LAND   **Fly AP2-54M**   A02-AP2-W54M

| Status | Basic Setup | System |

LAN Status   Wireless Status

Status >> Wireless Status   Refresh   Save   Help

Wireless Configuration

Wireless Status	Running
Wireless MAC Address	00-90-4B-E6-7C-D5
SSID(Network Name)	A02-AP2-W54M
Mode	G and B
Region	Others
Channel	6
SSID broadcasting	Started
Authentication Type	Automatic
Encryption Strength	Disable
MAC Authentication	Reject registered mac address

3.5.1 LAN Status

LAN Connection

Connection Type	Static IP
Physical Address	00-08-9F-30-80-35
LAN IP Address	192 . 168 . 0 . 254
Subnet Mask	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 0 . 201
Primary DNS Server	. . .
Secondary DNS Server	. . .

- **Connection Type:** Show the tipology use to IP address assignment. It can be **Static** (user assignment) or **Dynamic** (Wireless MIMO Multi-Function AP is DHCP client).
- **Physical Address:** Show LAN interface MAC address. Don't use this value for WDS configuration.
- **LAN IP Address:** Show IP LAN Address of Access Point (Default IP=192.168.1.254)
- **Subnet Mask:** Show Subnet Mask.
- **Default Gateway:** Show Default Gateway IP Address. To configure remotely this device, it's necessary insert IP of device that offer you an Internet connection.
- **Primary DNS Server:** Show DNS Server IP address.
- **Secondary DNS Server:** Show DNS Server IP address (it is active when primary DNS Server doesn't work).

3.5.2 Wireless Status

Wireless Configuration

Wireless Status	Running
Wireless MAC Address	00-90-4B-E6-7C-D5
SSID(Network Name)	A02-AP2-W54M
Mode	G and B
Region	Others
Channel	6
SSID broadcasting	Started
Authentication Type	Automatic
Encryption Strength	Disable
MAC Authentication	Reject registered mac address

- **Wireless Status:** Show Wireless Status. It can be **Running** o **Stopped**.
- **Wireless MAC Address:** Show WLAN Interface MAC Address. Use this value for WDS configuration.
- **SSID(Network Name):** Service Set Identifier, is a univoque name shared by wireless client and AP (if they are in Roaming). Using different SSID it is possible to associate determinate clients to determinate AP. It is an ASCII string of 32 characters.
- **Mode:** Show wireless mode. It can set on: **G only, B only, G and B.**
- **Region:** Show country (select **Others** for Europe).
- **Channel:** Show channel utilized for Wireless MIMO Multi-Function AP trasmission.
- **SSID Broadcasting:** Show SSID propagation mode. State can be: **Running** (Broadcasting enable) o **Stopped** (Broadcasting disable, SSID).
- **Authentication Type:** Show authentication method.
- **Encryption Strength:** Show tipology of encryption.
- **MAC Authentication:** Show MAC Filter policy applied from Wireless MIMO Multi-Function AP (**Accept All, Reject Registered MAC Address, Accept Registered MAC Address**).

Click on **Save** to save new configuration to Wireless MIMO Multi-Function AP Eprom.

Click on **Refresh** button to refresh page or click on **Help** to enter to the Help On-Line.

3.6 Basic Setup

In this window, is possible to set following parameters: **LAN Setup, Wireless Setup (Security, MAC Filtering e WDS)** and **DHCP Server Setup.**
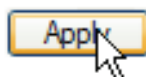
3.6.1 LAN Setup

In this page, you can set IP Address of Wireless MIMO Multi-Function AP. It can be obtained automatically from a DHCP server present in LAN or manually assigned.

○ **Dynamic IP**

◉ **Static IP**

LAN IP Address	192 . 168 . 1 . 254
Subnet Mask	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 1 . 1
Primary DNS Server	. . .
Secondary DNS Server	. . .
MTU	1500

Apply

Dynamic IP (DHCP Client): Select this to permit at AP to obtain automatically an IP address from a DHCP server present on LAN. Check **Dynamic IP** and click on **Apply** and after on **Save** to take effect.

Static IP: Select this to assign a static IP Address, Subnet Mask e Gateway to Wireless MIMO Multi-Function AP.
- **LAN IP Address:** Show IP LAN Address of Access Point (Default IP=**192.168.1.254**). If you change this value, it's necessary to check that all client in your LAN (if aren't set on DHCP Client) have an IP Address compatible.
- **Subnet Mask:** Show Subnet Mask (Default value is: **255.255.255.0**).
- **Default Gateway:** Show Default Gateway IP Address. it's necessary insert IP of device that offer you an Internet connection.
- **Primary DNS Server:** Show DNS Server IP address.
- **Secondary DNS Server:** Show DNS Server IP address (it is active when primary DNS Server doesn't work).
- **MTU:** Maximum Transmit Unit.

Click on **Apply** and after on **Save** to take effect.

Gateway has to be insert if you want to configure remotely Wireless MIMO Multi-Function Access Point.

3.6.2 Wireless Basic Setup

In this section, is possible to set Wireless Interface.

Basic Setup

Status	Running			
Operation	ON			
SSID	A02-AP2-W54M	Mode	g and b	
Region	Others	Channel	ch 6	Search the best channel
☑ Broadcast of SSID option				
	Apply			

- **Status:** Show wireless module status. Status can be **Running** o **Stopped**.
- **Operation:** Choose to activate or not integrated wireless module, click on **Apply** and after on **Save** (to take effect). Status can be **Running** o **Stopped**.
- **SSID:** Service Set Identifier, is a univoque name shared by wireless client and AP (if it is in Roaming). Using different SSID it is possible to associate some clients to determinate AP. It is an ASCII string of 32 characters.
- **Mode:** Show wireless mode; it can work in exclusive mode (choosing 802.11b o 802.11g) or in hybrid (choosing 802.11b+g). Select operating mode:
    1. **G and B:** allow to work with IEEE802.11b and IEEE802.11g devices
    2. **G Only:** allow to work exclusively with IEEE802.11g devices
    3. **B Only:** allow to work exclusively with IEEE802.11b devices

- **Region:** Choose Region where Wireless MIMO Multi-Function AP will be use. Automatically, Wireless MIMO Multi-Function AP set parameters to respect local law. (For Europe choose **Others**).
- **Channel:** Show wireless channel. ETSI standard (Europe) use channel from 1 to 13. Click on **Search the Best Channel** to start an automatic frequency scanning to find the best trasmission channel.
- **Broadcast SSID Option:** To increase WLAN security, it's possible to disable SSID broadcasting (deselect this option).

Click on **Apply** and **Save** to take effect.

It's necessary to set a right selection of Country (Region) to work in respect of local law.

The range of radio frequencies used by IEEE 802.11g wireless devices is called a "channel". Channels available depend on your geographical area. You may have a choice of channels (for your region) so you should use a different channel than an adjacent AP (access point) to reduce interference. Interference occurs when radio signals from different access points overlap causing interference and degrading performance.

Adjacent channels partially overlap however. To avoid interference due to overlap, your AP should be on a channel at least five channels away from a channel that an adjacent AP is using. For example, if your region has 11 channels and an adjacent AP is using channel 1, then you need to select a channel between 6 or 11.

3.6.3 Wireless Advanced Setup

In this section, it is possible to set:

- **Set Security (Wireless Security Setup)**
- **Enable MAC Filtering (Mac Authentication)**
- **Configuration WDS**

Security (Wireless Security Setup)

Select from **Authentication Type** the type of authentication.

You can choose 4 options: **Open System, Sharing Key, Automatic** e **WPA-PSK.**

- **WPA-PSK**: Wi-Fi Protected Access (WPA) represent today the best wireless security method. In Pre-Shared Key mode, you only have to set the PassPhrase (8 characters or more) and confirm it. All wireless client that have to access to AP must have set this PassPhrase. WPA, that use TKIP(Temporal Integrity Protocol), allow at the device to generate some key starting from the Passphrase and change it temporally, to increase security level; it doesn't require a RADIUS server. If WPA use AES standard (know as WPA2), it represent the best way to protect your Wireless LAN.

- **Open System:** This is default encryption algorithm. Sender and receiver don't share any key. It generates themselves a couple of keys and asks to other client to accept them. Keys will be regenerate every time that wireless connection is established. You have only to intoduce **WEP** key.

- **Shared Key:** Sender and receiver share the same keys, and use them until user choose to change these keys. You have only to intoduce **WEP** key.

WEP Configuration: Choose an identificative number for WEP key. Insert key that will be associate. Repeat these operations for all key (in this case there are 4 keys).

It is possible to insert only a WEP key.

It is possible to choose key lenght (64 or 128 bit) e his tipology (string or HEX).

	STRING	HEX
64 bit	1*	10*Y
128 bit	13*X	26*Y

X=[(0~9, A~Z, a~z Alphanumeric]
Y=[0~9, A~F Hexadecimal]
Example: a WEP Key of 128 bit in ASCII should be
"**atlantisland1**"
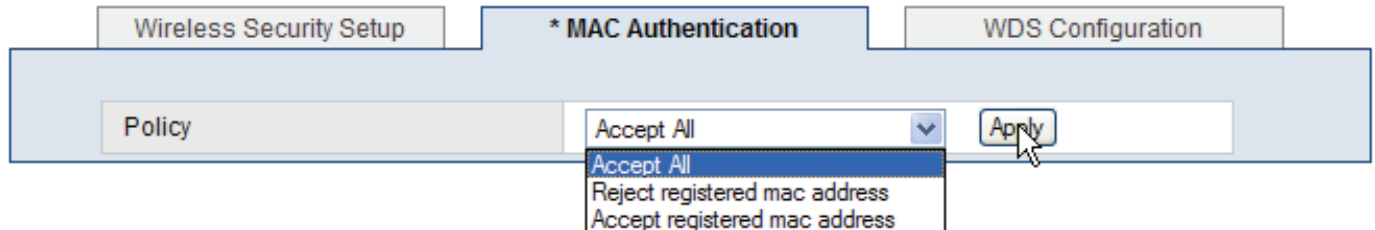An HEX key of 128 bit should be
[0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F]

Today WEP encryption is not considered like the most efficient wireless security algorithm. We suggest to use WPA where is possible.

Enable MAC Filtering(Mac Authentication)

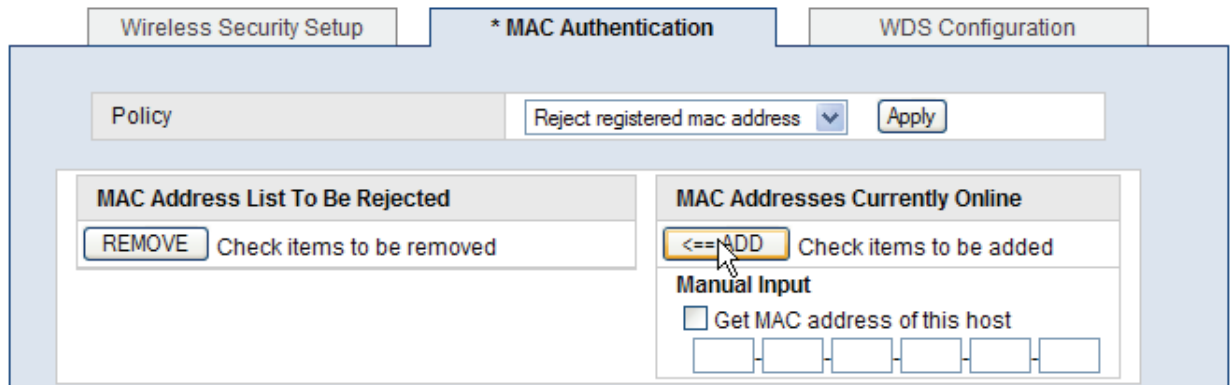This function permit to filter traffic restricting wireless access on the basis of MAC address.

It's possible to restrict access at a list of MAC address (or allow access only at a list of MAC address).

- **Accept ALL:** All users can access to AP.
- **Reject Registered MAC Address:** All users can access to AP excluded Mac address specifies in list. Insert MAC address to block and click to ADD. The contents of field MAC/IP will be move to the list **MAC Address List to be Rejected.** To delete MAC from list, select it and click on **REMOVE.**

Check **Get MAC address of this host** to clone MAC address of client logged into AP (it is a fast way to add MAC Address to list).

- **Accept Registered MAC Address: Only MAC Address in list can be allowed to access.** Insert MAC address to block and click to ADD. The contents of field MAC/IP will be move to the list **MAC Address List to be**

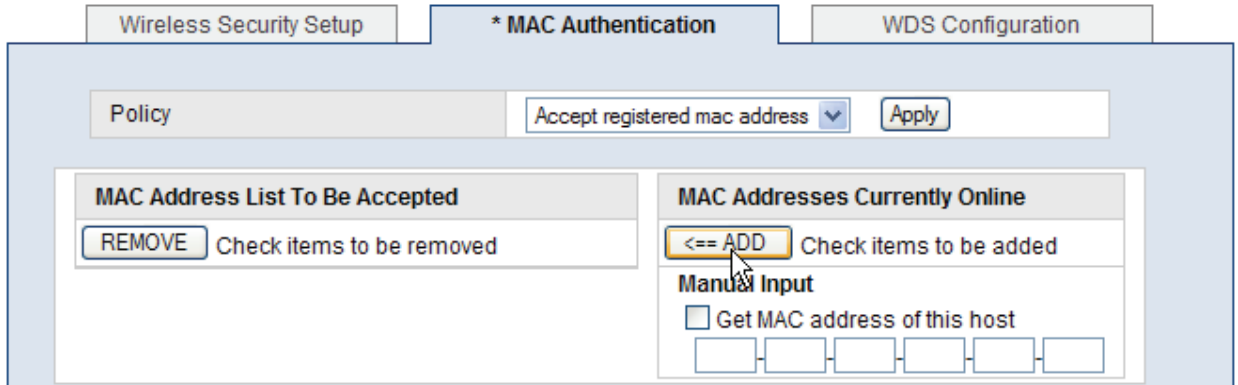**Rejected.** To delete MAC from list, select it and click on **REMOVE.**

Wireless Security Setup	* MAC Authentication	WDS Configuration

Policy   Accept registered mac address ▼   Apply

MAC Address List To Be Accepted

REMOVE   Check items to be removed

MAC Addresses Currently Online

<== ADD   Check items to be added

Manual Input

☐ Get MAC address of this host

[ ]-[ ]-[ ]-[ ]-[ ]-[ ]

Check **Get MAC address of this host** to clone MAC address of client logged into AP (it is a fast way to add MAC Address to list).

Click on **Apply** and **Save** to take effect.

It can be memorized until **50** MAC Addresses.

Configuration (WDS)

WDS Technology (Wireless Distribution System) allows communications between 2 AP and it can permit to realize particular applications. This AP family allows to create until 6 WDS link (for AP) at the same time.

⚠️ Don't create a closed circle of WDS Link. It should be dangerous for your network.

Follow an example of WDS Link configuration.

Create a WDS Link

Introduce the MAC Address of the AP which to connect themselves in WDS link and click on **Add AP**. A wireless link between 2 AP will be created (repeat this operation in every AP).

To remove a WDS link, deselect **Enable** button from selected row.

Both AP must have the same setting (Channel, WEP/WPA, SSID).
WPA encryption can be use when WDS mode is enable.
MAC Address AP is MAC Address show in field **Wireless MAC Address** (**Status/Wireless Status/Wireless MAC Address**).

Operatives mode permited to WDS are:

Access Point (WDS disable):

It is a normal operative mode; in this mode, AP is use to create a WLAN. Wireless MIMO Multi-Function Access Point is a contact point between wired LAN and wireless Client.

Repeat Mode (WDS enable):

Allow to extend wireless coverage. Being wireless protocol a half-duplex protocol, AP configured in Repeat mode can reduce throughput performance.
In this mode, a group of AP can be utilize to increase the coverage of your WLAN, without any kind of cabling. It's necessary to check SSID, encryption (WEP or WPA) and trasmission channel; it have to be the same in every AP.
In this picture you can see an explanation:
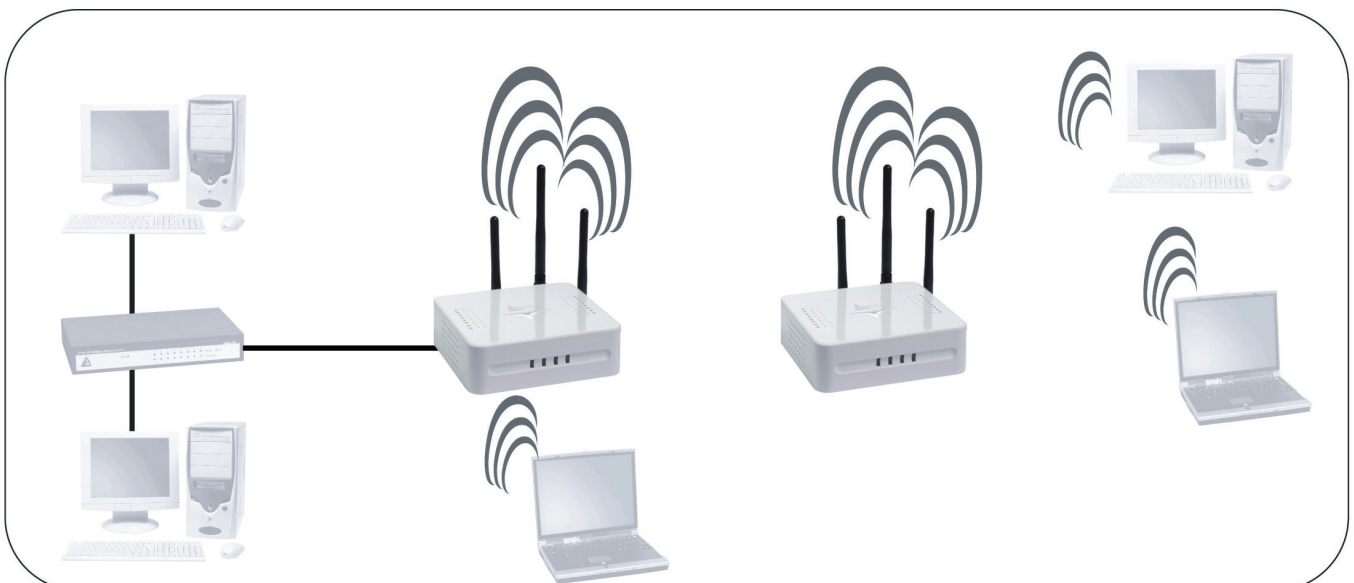
Wireless Bridge (WDS enable, MAC Filtering): A couple of AP that operate in Bridge mode allow to connect through a wireless bridge 2 different LANs.
It's necessary to check SSID, encryption (WEP or WPA) and trasmission channel; it have to be the same in every AP that works in Bridge Mode.
To complete configuration, it's necessary to activate both that works in Bridge Mode, the function Mac Filtering in **Accept Registered MAC Address** has to be enable and the list has to be empty (any client wireless will be accepted). Full throughput offered to AP will be utilized for Bridge Function.
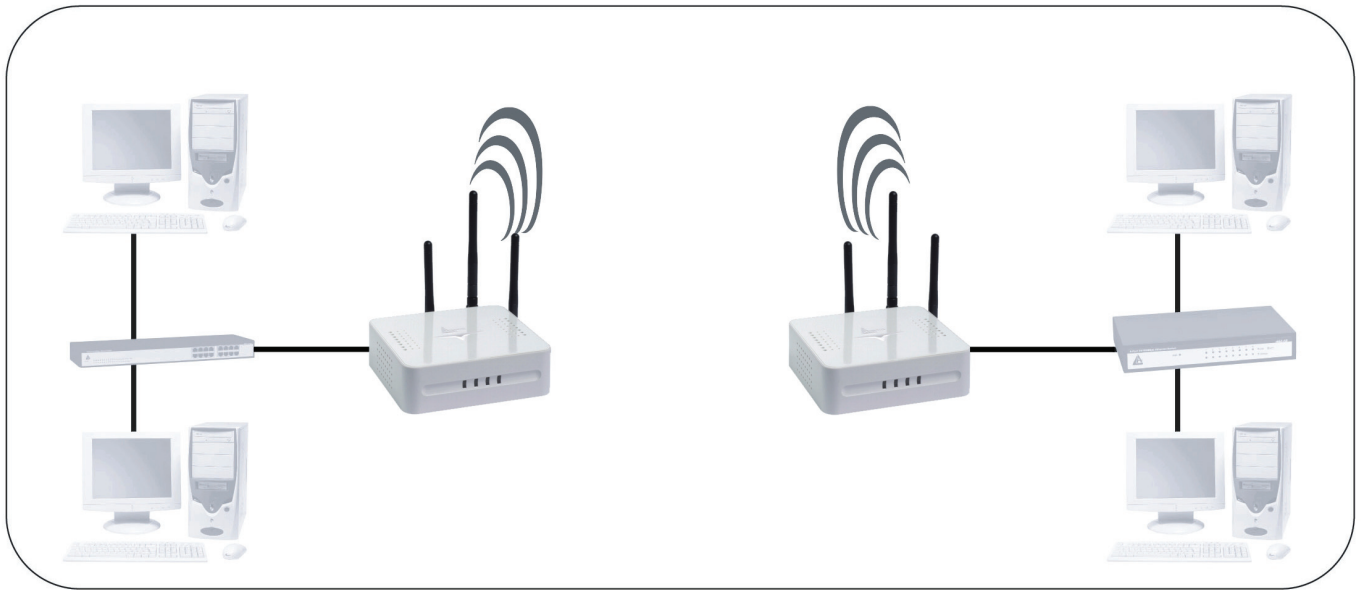
3.6.4 DHCP Server Setup

DHCP Server Status	Stopped
DHCP Server Operation	Start ▾
DHCP IP Pool	192 . 168 . 1 . 2 — 192 . 168 . 1 . 253
Subnet Mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 1 . 1
☐ Manual DNS configuration	___ . ___ . ___ . ___ , ___ . ___ . ___ . ___

Apply

- **DHCP Server Status:** Show status of integrated DCHP Server module. It can be **Running** or **Stopped.**
- **DHCP Server Operation:** Choose the state of integrated DHCP Server module, press on **Apply** and after on **Save** (to take effect). It can be **Running** or **Stopped**. DHCP Server Status will change too.
- **DHCP IP Pool:** Select IP range that will be assigned to wireless client.
- **Subnet Mask:** Inserire la Subnet Mask (Il valore di default è: **255.255.255.0**) assegnati ai vari clients DHCP.
- **Subnet Mask:** Insert Subnet Mask value (default value is: **255.255.255.0**) assigned to wireless client.
- **Gateway:** Show Default Gateway IP Address (it's not necessarily to be the IP of Access Point).
- **Manual DNS Configuration:** Select this option to assign static DNS servers to DHCP clients.
- **Primary DNS Server:** Show DNS Server IP Address.
- **Secondary DNS Server:** Show DNS Serve IP address (it is active when primary DNS Server doesn't work).

Click on **Apply** and **Save** to take effect
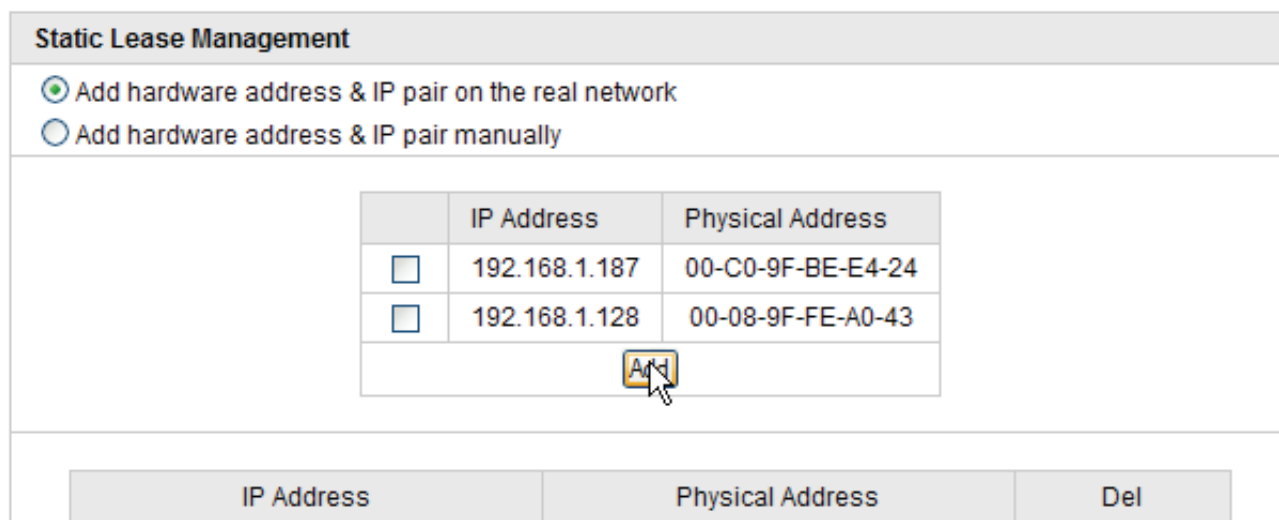
If another DHCP Server is active in LAN, it's necessary to disable (or correctly set the device to hevitate any kind of IP Overlap) this function in Wireless MIMO Multi-Function Access Point.

Static Lease Management function, allow to assign on a PC (it's necessary to know the MAC Address) the same IP address. You have to insert MAC Address and IP assigned to server in the table following explained.

There are 2 different options:

- **Add hardware address & IP pair manually**

It will show all IP/MAC find from Wireless MIMO Multi-Function Access Point. Select row and click to **Add.** Click on **Save** to take effect.

- **Add hardware address & IP pair on the real network**

Insert MAC Address of PC (set in DCHP client) in **Phisycal Address** and the Ip that will be assigned to it. Click on **Search MAC Address** to have a list of **MAC/IP** found. Click on **Add** and after on **Save** to take effect.

3.7 System

In this section it's possible to set: **Admin Setup, Firmware Upgrade, System Log** and **Misc.**

3.7.1 Admin Setup

In this section it is possible to set the device password.
It's necessary to insert password 2 times (to confirm it).

We suggest to note new password.

Login Account Setup

Current Login ID	
Current Password	
New Login ID	
New Password	
Re-type New Password	
	Apply

Click on **Apply** and **Save** to take effect.

If you lose password, it is possible to restore AP with factory default setting (AP will lose any configuration).
Power on the device, press reset button until AP will reboot (STATUS LED turn off).
When STATUS LED will blinking, release reset button.
Now, Wireless MIMO Multi-Function Access Point will restart with factory setting.

3.7.2 Firmware Upgrade

It is possible to upgrade firmware version of Wireless MIMO Multi-Function Access Point.
Follow these instructions:
1.   Download the latest firmware from website **www.atlantis-land.com**
2.   Click on **Browse** and select path where is locate the new firmware.
3.   Click on **Upgrade**.
Wireless MIMO Multi-Function Access Point will verify firmware integrity and after it will upgrade firmware.

Firmware Upgrade	
Firmware Version	1.02
Build Date	Fri Jun 23 14:34:25 KST 2006
New Firmware	[ ] Sfoglia...
	Upgrade

Then, press to **Reset** button on the rear panel to reset the device.

Do NOT upgrade firmware on any Atlantis Land product over a wireless connection. Failure of the device may result. Use only hard-wired network connections.

After upgrading you must reset the router to factory default settings, then manually re-enter your settings.

Please pay attention. In case electrical shutdown, during this procedure, this product could be not usable.

When uploading software to the Wireless Multi-Function Access Point, it is important not to interrupt the Web browser by closing the window or loading a new page. If the browser is interrupted, it may corrupt the software

3.7.3 System Log

In this section, it is possible to check logs about security of Wireless MIMO Multi-Function Access Point.
All events registered will be in evidence to permit a fast check.

System Log Setup

Status	System Log is running Log Count(Max Count) : 5(400)
Operation	[Stop]
Clear System Log	[Clear]

System Log History

Timestamp	System Log Contents
*****	System restarted (Version : 1.02)

Click on **Stop (**Status can be **Running** o **Stopped)** to stop System Log Server, on **Clear** to empty memory.

3.7.4 Misc

In this section is possible to set:
- **HostName Setup**
- **Config Management/Restart**
- **System Time Setup**

HostName Setup

Hostname Setup

| Hostname | A02-AP2-W54M | Apply |

It is possible to set the device name. Click on **Apply** and **Save** to take effect.

Config Management/Restart

Config Mgmt/Restart

Config Backup	Download configuration file into your PC
Sfoglia... / Config Restore	After browsing a configuration file, click "Config Restore" button
Restore Default	To restore the factory default configuration, click this button.
Restart System	To restart the system, click this button. But, some configuration would be erased if you didn't save a configuration.

Wireless MIMO Multi-Function Access Point allow to make a backup (and restore) of configuration on (and from) your PC's HD.
With this function is possible to save complicated configuration and restore it in a few fast step.
To backup data, click on **Config Backup** and select path for data saving (AP will create a file with **.cfg** extension)
To restore data, click on **Browse** and select path where .cfg file is content; then click on **Config Restore.**
If is necessary to restore AP with factory default (NB: this operation will delete any type of configuration), click on **Restore Default**. AP will reboot and it charge factory setting. (For details please refer to section 3.2)

To restart AP, click on **Restart System**.
Click on **Apply** and **Save** to take effect.

System Time Setup
AP have not an internal clock, but it use SNTP protocol to solve this disadvantage.

To choose your country, it is necessary select corret fuso (**Standard Time Zone**) and choose, through combo box, a SNTP Server.
It is possible to receive correct hour and data only if AP is connected on Internet and IP configuration is correct (DNS included).
Click on **Apply** and **Save** to take effect.

APPENDIX A: Troubleshooting

This chapter covers potential problems on Wireless MIMO Multi-Function Access Point and the corresponding remedies.

A.1 LEDs

The LEDs are useful aides for finding possible problem causes.

A.1.1 LED Power

The PWR LED on the front panel does not light up.

Steps	CORRECTIVE ACTION
1	Make sure that the Wireless MIMO Multi-Function Access Point power adaptor is connected to the Access Point and plugged in to an appropriate power source. Use only the supplied power adaptor.
2	Check that the Wireless MIMO Multi-Function Access Point and the power source are both turned on and the Wireless Access Point is receiving sufficient power.
3	If the error persists, you may have a hardware problem. In this case, you should contact your vendor.

A.1.2 LED LAN

The LAN LED on the front panel does not light up.

Steps	CORRECTIVE ACTION
1	Check the Ethernet cable connections between the Access Point and the computer or hub.
2	Check for faulty Ethernet cables.
3	Make sure your computer's Ethernet card is working properly.
4	If these steps fail to correct the problem, contact your local distributor for assistance.

A.1.3 LED WLAN

The WLAN LED on the front panel does not light up.

Steps	CORRECTIVE ACTION
1	Press the "Reset" button on the rear panel of the AP, to set back to factory default setting.
2	Please unplug AC Adaptor and replug-it.
3	If these steps fail to correct the problem, contact your local distributor for assistance.

A.2 WEB

I cannot access the web configurator.

Steps	CORRECTIVE ACTION
1	Make sure you are using the correct IP address of the Wireless MIMO Multi-Function Access Point. Check the IP address of the Access Point (192.168.1.254).
2	Check **Mac Filtering** (on Security).
3	Press the "Reset" button on the rear panel of the AP, to set back to factory default setting.

The web configurator does not display properly.

Steps	CORRECTIVE ACTION
1	Make sure you are using Internet Explorer 5.0 and later versions.
2	Delete the temporary web files and log in again. In Internet Explorer, click Tools, Internet Options and then click the Delete Files ... button. When a Delete Files window displays, select Delete all offline content and click OK. (Steps may vary depending on the version of your Internet browser.)

A.3 Login

If you forget the password to log in.

Steps	CORRECTIVE ACTION
1	The Reset function is to reset the setting back to factory default setting, once you press the "RESET" button within 15 seconds, the LED of the WLAN will turn off. And when the Access Point is ready, the WLAN LED will start blinking.
2	Before configurating this Wireless MIMO Multi-Function Access Point, you need to know the following default settings. **Username: admin** **Password : admin** **IP Address : 192.168.1.254** **Subnet Mask : 255.255.255.0** **Wireless: SSID= A02-AP2-W54M, Channel=6, WEP=disable**
3	To increase security level, it is important change password after first configuration.

A.4 Remote Management

I can't manage Wireless MIMO Multi-Function Access Point remotely.

Steps	CORRECTIVE ACTION
1	Make sure to insert Router ADSL IP in Default Gateway field of Wireless MIMO Multi-Function Access Point.
2	Make sure that ADSL Router is correctly configured (create a port forwarding from port TCP 80 to Wireless MIMO Multi-Function Access Point IP Address).

A.5 FAQ

Question	Can I run an application from a remote computer over the wireless network?
Answer	This will depend on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.

Question	Can I play computer games with other members of the wireless network?
Answer	Yes, as long as the game supports multiple players over a LAN (local area network). Refer to the game's user guide for more information.

Question	What is Spread Spectrum?
Answer	Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communications systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade-off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread-spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).

Question	What is DSSS? What is FHSS? And what are their differences?
Answer	Frequency-Hopping Spread-Spectrum (FHSS) uses a narrowband carrier that changes frequency in a pattern that is known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise. Direct-Sequence Spread-Spectrum (DSSS) generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip, the greater the probability

that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers.

Question	Would the information be intercepted while transmitting on air?
Answer	WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN offers the encryption function (WEP) to enhance security and access control.

Question	What is WEP?
Answer	WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 64-bit or 128-bit shared key algorithm, as described in the IEEE 802.11 standard.

Question	What is WPA?
Answer	Attempting IEEE802.11i standard, Wi-Fi Alliance has chosen from preliminary version a group of specifications called WPA (Wi-Fi Protected Access). Specifications of WPA are: - TKIP Integration (Temporal Key Integrity Protocol) to allow key change dinamically and integrity control of packets. - Advanced mechanism to manage authentication and access control to network services in centralized mode (802.11x through EAP, TLS use is necessary) - Authentication key is different to key used for encryption This protocol is more strong that WEP encryption.

Question	What is WPA2?
Answer	Recently approved by Wi-Fi Alliance, the new standard WPA2 is an evolution of WPA (Wi-Fi Protected Access), supported by almost compatible IEEE802.11g clients.

WPA standard, required to repair WEP weakness, has only a part of 802.11i specifics.

WPA2 introduce all IEEE802.11i specifics, like support for Advanced Encryption Standard (AES), encryption protocol use also in VPN IpSEC.

WPA2 devices will be compatible with WPA device, but they will be updated through new driver and firmware.

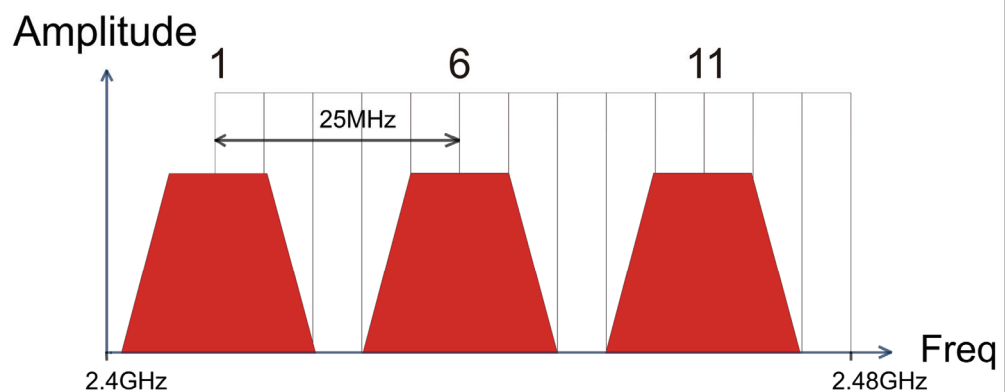NetFly AP2-54M supports WPA2 without performance reduction.

Question	What is the impact of these algorithms of encryption on performance?
Answer	Chipset guarantee the full hardware support, without performance reduction, of almost recent security standard, like Wi-Fi Protected Access (WPA/WPA2) and IEEE802.11i.

Question	What is infrastructure mode?
Answer	When a wireless network is set to infrastructure mode, the wireless network is configured to communicate with a wired network through a wireless access point.

Question	What is roaming?
Answer	Roaming is the ability of a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single access point. Before using the roaming function, the workstation must make sure that it is the same channel number with the access point of dedicated coverage area.

Question	What is ISM band?
Answer	The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

Question	What is the IEEE 802.11g standard?

Answer	Approved in June, 2003 as an IEEE standard for wireless local area networks (WLANs), 802.11g offers wireless transmission over relatively short distances at up to 54 megabits per second (Mbps) compared with the 11 megabits per second of the 802.11b (Wi-Fi) standard. Like 802.11b, 802.11g operates in the 2.4 GHz range and is thus compatible with it.

Question	What is WDS?
Answer	WDS (Wireless Distribution System) is a technology that allow at a pair of Wireless Multi-Function APs operating under Bridge mode to act as the bridge that connect two Ethernet networks or Ethernet enabled clients together. Repeat Mode is able to extend the effective range and coverage of the wireless network.

Question	I can't use AP Repeat Mode. What can I do?
Answer	If you have some problem, follow these steps: • Insert in Security section settings about WEP/WPA (if present) and verify SSID and trasmissions channel. • Make sure that both AP has same firmware version. • Use A02-AP2-W54M for like AP and Repeater

Question	Why 2 AP trasmitting on different channel making interferences?
Answer	Every channel occupies about 22Mhz; being ISM band made of 80 Mhz, you can utilize only 3 channel without overlap. We suggest to set AP with 5 channel interval between 2 AP utilized. (ex. AP1-channel 1, AP2-channel6). Interferences are making when 2 or more channels overlap themselves. Follow pictures explain this:

Amplitude

1 6 11

25MHz

2.4GHz   2.48GHz   Freq

Question	Does IEEE802.11b clients works properly with AP IEEE802.11g?
Answer	It is possible to use IEEE802.11b clients with IEEE802.11g Access Point. Performance will be reducing to 11Mbps to guarantee full compatibility with IEEE802.11b. We suggest to upgrade WLAN to IEEE802.11g.

Question	How I can eliminate interferences in WLAN?
Answer	We suggest to turn off (or place far) any device that operate in the same frequencies and use directional antennas to reduce noise. I

Question	Antenna Specifications
Answer	Choose properly antenna, any incorrect choose can damage product. It can be follow specifications: • Reverse SMA connector • compatible with IEEE 802.11 standard (2.4Ghz) • Resistivity: 50 Omh Please respect your local law about electromagnetics emissions.

Question	May I use a cable to improve antenna standing?

Answer	Yes, it is possible.
	It's necessary to know that every cable induce attenuation (dB/m).
	A very long cable should be made useless a positive effect generate by antenna's gain.

Question	What type of antenna Can I use to increase AP coverage?
Answer	Here you can find our indoor antennas:
	A02-ANT0501
	A02-ANT0601
	A02-ANT06D01
	Please visit our website for any information.

Question	What is MIMO XR™ technology?
Answer	MIMO XR™ technology allows to have a superior coverage in comparison to the normal IEEE802.11g WLAN with a more uniform throughput (not coverage zone will be reduced).

Question	What is Packet-Overdrive ™ technology?
Answer	Packet-Overdrive ™ technology allows having very fast performance, making the product an ideal solution for any binding application like streaming video HD.

APPENDIX B: Regulations

Some countries use different laws about ISM band frequency use.
Please to make reference to follow table:

Channel	Country
1-11	USA/CANADA
1-13	ETSI(Europe)
10-11	Spain
10-13	France
14	MKK
1-14	Japan (MKKI Telecom)
3-9	Israel
5-13	Israel

APPENDIX C: Technical Features

Standards	Standard: IEEE 802.11g/b IEEE 802.3u 10/100BASE-TX Fast Ethernet
Advanced	• Wireless Distribution System (Bridge and Repeat) • Advanced Dual-Channel Receiver for MIMO XR™ Support • Range-OVERDRIVE™ Technology provides extended coverage and low throughput fluctuations • Packet-OVERDRIVE™ Technology offers an high throughput for HD Video Streaming
Signal Type:	OFDM (Orthogonal Frequency Division Multiplexing)
Modulation:	QPSK / BPSK / CCK / OFDM
LED Indicators:	Power, SYS, WLAN (Link), LAN (Link/Activity)
Frequency Range	2412 ~ 2484 MHz ISM band (channels 1 ~ 14)
Frequency Band:	2.4 GHz
Channel:	1 ~ 11 Channels (US, Canada, China) 1 ~ 13 Channels (Europe) 1 ~ 14 Channels (Japan)
Data Encryption:	64 bit / 128 bit WEP Encryption, WPA/WPA2
Data Transfer Rate	Fast Ethernet: 100Mbps Wireless: Up to 54Mbps (with Automatic Scale Back)
Receiver Sensitivity	54Mbps: Typical -79dBm @10% PER 11Mbps: Typical -90dBm @8% PER
Transmit Power	802.11g: Minimum 14dBm typically 802.11b: Minimum 16dBm typically
Transmission Range:	Outdoor: 100~300M (depends on environment) Indoor: 50~100M (depends on environment)
Network Cables	10BASET: 2-pair UTP Cat. 3,4,5 (100 m)
Interface	1 x 10/100Mbps RJ45 port
Antenna:	3 x 2dBi Dipole Antennas
Chipset	Ralink™ 2661T
DC inputs	DC 5V /1A

Power Consumption	5W (Max)
Temperature	Operating: 0° ~ 40° C, Storage: -10° ~ 70° C
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Dimensions	120 x 120 x 40 mm (W x H x D) without Antenna

APPENDIX D: Support

If you have any problems with the Wireless MIMO Multi-Function Access Point, please consult this manual.

If you continue to have problems you should contact the dealer where you bought this Access Point.

If you have any other questions you can contact the Atlantis Land company directly

at the following address:

Atlantis Land SpA
Viale De Gasperi, 122
20017 Mazzo di Rho(MI)
Tel: +39. 02.93906085, +39. 02.93907634(help desk)
Fax: +39. 02.93906161
Email: info@atlantis-land.com or tecnici@atlantis-land.com
WWW: http://www.atlantis-land.com